

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A distributed industrial process control system comprising:

a central control including a computer system having a controller that produces a control signal for a field device and having a user input/output (I/O) for providing an interface between the computer system and a user, and a wireless communication link associated with the computer system for transmitting from and receiving at the computer system, process control information, ~~including the control signal~~, and secondary information different from the process control information; and

a distributed network of industrial process control field devices, wherein at least one of the field devices either controls a physical process parameter based on the process control information transmitted from the computer system controller and received by the at least one of the field devices or measures a physical process control parameter to determine a portion of the process control information received by the computer system controller from the at least one of the field devices; ~~being under the control of the controller~~ and having

an associated wireless communication link communicatively disposed directly between the at least one of the field devices and the controller, for transmitting ~~and receiving~~ the process control information and the secondary information between the at least one of the field devices and the computer system controller to provide wireless communication between the computer system and the at least one of the field devices.

2. (Previously Presented) The system of claim 1, wherein:

the controller is adapted to control field devices of the distributed network based upon commands from the computer system and for providing data to the computer system based upon signals received from field devices of the distributed network.

3. (Original) The system of claim 1 wherein the field devices are powered from the distributed network.

4. (Currently Amended) The system of claim 3 wherein the wireless communication link associated with the at least one of the field devices is powered from the distributed network.

5. (Original) The system of claim 1 wherein the distributed network includes a field module in communication with a plurality of field devices and a wireless communication link associated with the field module to communicate with the plurality of field devices.

6. (Original) The system of claim 1 wherein the distributed network includes a network bridge and a wireless communication link associated with the network bridge to communicate with field devices connected to control networks serviced by the network bridge.

7. (Original) The system of claim 1 wherein the secondary information includes diagnostic data.

8. (Original) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for monitoring process variables.

9. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for performing control actions.

10. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for performing diagnostics.

11. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field for receiving through the wireless communication links status information.

12. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for accessing secondary functions of the field devices.

13. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for performing shut-down procedures.

14. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for observing critical temperatures and pressures.

15. (Withdrawn) The system of claim 1 wherein the central control is capable of communicating with the field device through the wireless communication links for adjusting device operating characteristics.

16. (Currently Amended) A distributed industrial process control system comprising:

a plurality of industrial process control field devices;

a controller controlling the field devices and producing process control information including a control signal for the field devices, wherein each of the plurality of field devices controls a physical process parameter based on a process control signal included in the process control information transmitted by a computer system controller and received by the field device or measures a physical process control parameter to determine process control information received by the computer system controller from the field device;

a plurality of wireless communication links, each link associated with at least one of the field devices and communicatively disposed directly between the at least one of the field devices and the controller for transmitting ~~and receiving~~ process control information, ~~including the control signal~~, and secondary information different from the process control information between the field device and the controller; and

a central control capable of communicating with each of the wireless communication links to transmit data to and receive data from selected field devices.

17. (Original) The system of claim 16 and further comprising:
a network connecting the plurality of field devices to provide energization and signal transmission.

18. (Original) The system of claim 17 wherein the plurality of wireless communication links are powered from the network.

19. (Original) The system of claim 17 and further comprising:
a field module connected to the network and in communication with at least two of the field devices and one of the wireless communication links.

20. (Original) The system of claim 17 and further comprising:
a network bridge connected in the network and connected to one of the wireless communication links.

21. (Original) The system of claim 17 wherein the data includes process control information.

22. (Original) The system of claim 17 wherein the data includes diagnostic data.

23. (Original) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for monitoring process variables.

24. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing control actions.

25. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing diagnostics.

26. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for providing status information.

27. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for accessing secondary functions of the field devices.

28. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing shut-down procedures.

29. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for observing critical temperatures and pressures.

30. (Withdrawn) The system of claim 16 wherein the central control is capable of communicating with the field devices through the wireless communication links for adjusting device operating characteristics.

31. (Currently Amended) A distributed industrial process control system comprising:

a controller that produces a periodic control signal for one or more industrial process control field devices;

a plurality of industrial process control field devices under the control of the controller, wherein at least one of the field devices either controls a physical process parameter based on the periodic control signal transmitted by the controller and received by the at least one of the field devices or measures a physical process control parameter to

determine process control information received by the controller from the at least one of the field devices;

a plurality of wireless communication links associated with the field devices and communicatively disposed directly between the field devices and the controller for transmitting ~~and receiving~~ process control information, ~~including the control signal~~, and secondary information different from the process control information between the field devices and the controller;

a network for providing power to the field devices and the wireless communication links; and

a central control capable of communicating with the field devices through the wireless communication links.

32. (Original) The system of claim 31 wherein the network is connected to the field devices and the central control to provide a signal transmission path therebetween.

33. (Canceled)

34. (Canceled)

35. (Original) The system of claim 31 wherein the field devices are capable of performing diagnostic functions and wherein the wireless communication links communicate diagnostic data.

36. (Original) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for monitoring process variables.

37. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing control actions.

38. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing diagnostics.

39. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for providing status information.

40. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for accessing secondary functions of the field devices.

41. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for performing shut-down procedures.

42. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for observing critical temperatures and pressures.

43. (Withdrawn) The system of claim 31 wherein the central control is capable of communicating with the field devices through the wireless communication links for adjusting device operating characteristics.

44. (Currently Amended) The system of claim 1, wherein the wireless communication link associated with the at least one of the field devices is disposed on a field module communicatively connected to the at least one of the field devices via a hard-wired communication link.

45. (Previously Presented) The system of claim 1, wherein the wireless communication link is disposed on the at least one of the field devices.

46. (Previously Presented) The system of claim 1, wherein the wireless communication link associated with the at least one of the field device is adapted to communicate directly with the wireless communication link associated with the computer system.

47. (Previously Presented) The system of claim 16, wherein at least one of the plurality of wireless communication links is disposed on the at least one of the field devices.

48. (Previously Presented) The system of claim 31, wherein at least one of the plurality of wireless communication links is disposed on at least one of the field devices.

49. (Previously Presented) The system of claim 1, wherein the process control information is periodically produced and the secondary information is non-periodically produced.

50. (Previously Presented) The system of claim 49, wherein the process control information is periodically transmitted via the wireless communication link and the secondary information is transmitted via the wireless communication link interspersed between some of the periodically transmitted process control information.

51. (Previously Presented) The system of claim 1, wherein the process control information includes parameter values specified by a standard control system communication protocol and the secondary information includes parameter values not specified by a standard control system communication protocol.

52. (Previously Presented) The system of claim 51, wherein the standard control system communication protocol is a Fieldbus protocol.

53. (Currently Amended) The system of claim 1, wherein the secondary information is transmitted to the at least one of the field devices via the wireless communication link.

54. (Currently Amended) The system of claim 53, wherein the secondary information is transmitted to the at least one of the field devices via the wireless communication link to access a function of the at least one of the field devices other than a control function that directly affects a physical process parameter.

55. (Currently Amended) The system of claim 53, wherein the secondary information transmitted to the at least one of the field devices includes configuration information, calibration information, and programming information.

56. (Currently Amended) The system of claim 1, wherein the secondary information is produced by the at least one of the field devices and is transmitted to the process controller and wherein the secondary information includes diagnostic information or error code information.